

**Title:**

Fire Resistance Test  
In Accordance With  
BS EN 1365-2: 2014,  
On A Loadbearing  
Timber Floor  
Construction Protected  
By A Plasterboard  
Ceiling Incorporating  
Nine Down Lights

**Date of Test:**

17 September 2019

**Issue 1**

20<sup>th</sup> February 2020

**WF Report No.**

416981



**Prepared for:**

Ansell Electrical  
Products Ltd

Unit 6B  
Stonecross Ind. Park  
Yew Tree Way  
Warrington  
WA3 3JD



0249

# Test Specimen

## Summary of Tested Specimen

The timber floor assembly had overall nominal dimensions of 4400 mm long by 2960 mm wide by 257 mm deep. It comprised 'James Jones 220mm B+' engineered timber I joists at 600 mm centres, spanning the 4m length of the furnace. The upper surface of the floor comprised nominally 22 mm thick tongue and grooved chipboard flooring. The floor assembly was protected on its underside by a direct fixed ceiling, formed from a single layer of 15 mm thick plasterboard referenced 'Gypsum Gyproc Wallboard Type A'.

The ceiling incorporated nine down lighter light fittings, consisting of six model types referenced as follows:

Specimen Test Reference	Model Reference
A (1 & 2)	APRILEDP/G/MW
B (1 & 2)	APRILEDP/CW
C (1 & 2)	APRILEDP/CCT
D	AEFRG/MW
E	AEFRD/MW
F	AEFRD/IP65/MW

The floor supported a uniformly distributed load of 150kg/m<sup>2</sup>, the equivalent of 1.47kN/m<sup>2</sup>. This load was provided by the test sponsor as to represent the expected working load for the timber floor construction in practice.

*Detailed drawings of the test specimen(s) and a comprehensive description of the test construction based on a detailed survey of the specimen(s) and information supplied by the sponsor of the test are included in the Test Specimen and Schedule of Components sections of this report.*

## Performance Criteria and Test Results

### Loadbearing Capacity

This is the time in completed minutes for which the test specimen continues to maintain its ability to support the test load during the test. Support of the test load is determined by both the amount and the rate of Deflection. The limiting deflection and the limiting rate of deflection for the specimen, as specified by the Standard, are calculated as:

(d) Depth of structural section, mm	220
(L) Length of clear span, mm	4250
Limiting deflection, mm	205.25
Limiting rate of deflection, mm/sec	9.12

The allowable rate of deflection criteria is not applicable for the first 10 minutes of the test. This criterion was satisfied for 30 minutes\*.

### Integrity

It is required that the specimen retains its separating function, without:

- causing ignition of a cotton pad when applied
- permitting the penetration of a gap gauge as specified in BS EN 1363-1: 2012
- sustained flaming on the unexposed surface
- subsequent failure of loadbearing capacity

**These requirements were satisfied for the periods shown below:**

### Sustained flaming

30 minutes\*

### Gap gauge

30 minutes\*    No failure\*

### Cotton pad

30 minutes\*

### Insulation

It is required that the mean temperature rise of the unexposed surface shall not be greater than 140°C and that the maximum temperature rise shall not be greater than 180°C. Insulation failure also occurs simultaneously with integrity failure.

**These requirements were satisfied for the period shown below:**

30 minutes\*    No failure\*

\*Test was discontinued after a period of 30 minutes.

### Date of Test

17 September 2019

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## Signatories

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Responsible Officer

**J. King\***

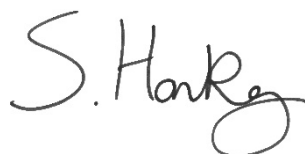
Technical Officer



Approved

**C. Hoyle\***

Technical Officer



Head of Department

**S. Hankey\***

Business Unit Head – Fire Resistance

\* For and on behalf of **Warringtonfire**.Report Issued: 20<sup>th</sup> February 2020

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## Revision History

Issue No :	Re-issue Date:
Revised By:	Approved By:
Reason for Revision:	

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Reason for Revision:	

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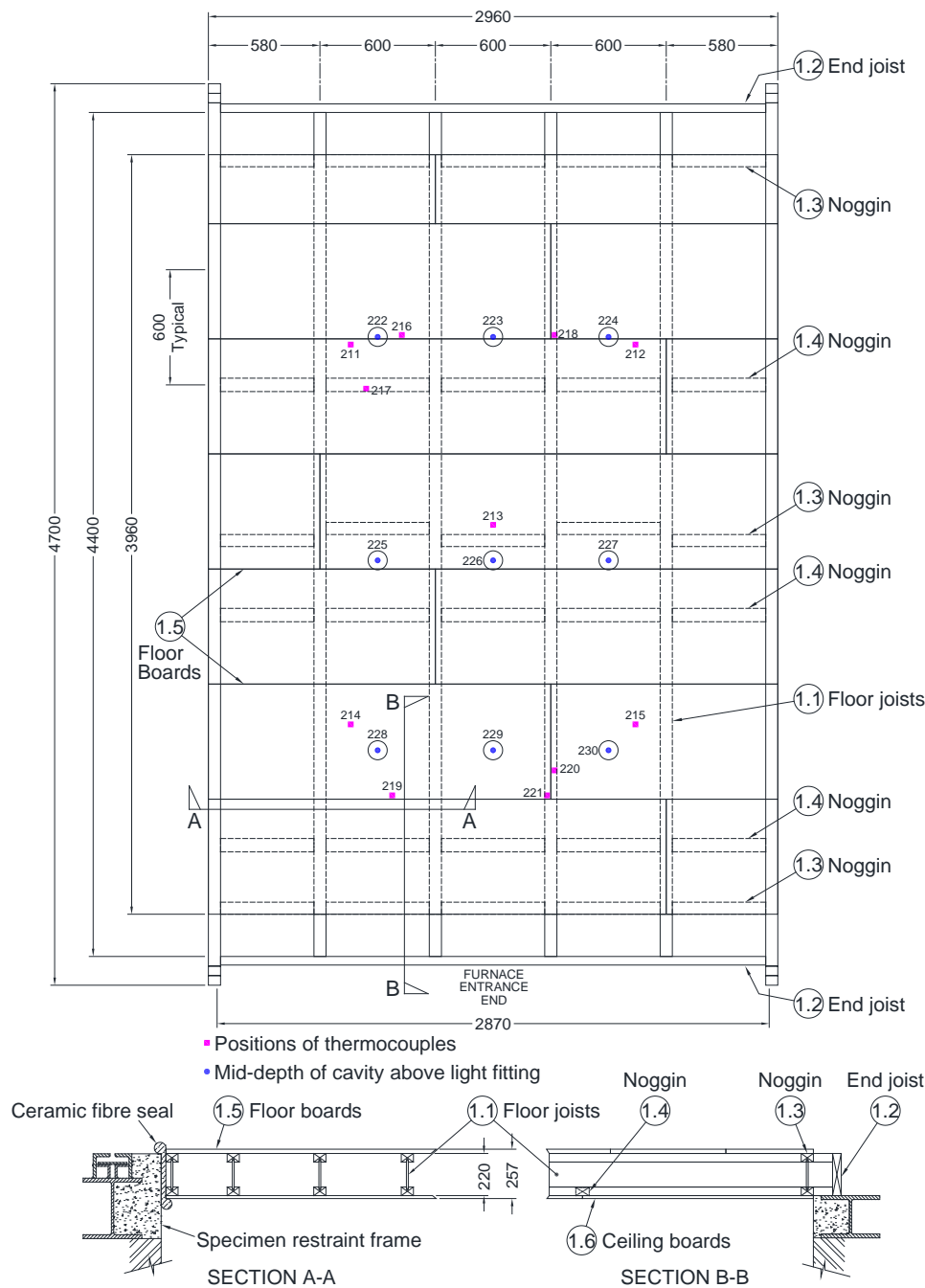
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# Test Conditions

<b>Standard</b>	<p>BS EN 1365-2: 2014, 'Fire resistance tests for loadbearing elements – Part 2: Floors and Roofs'</p> <p>The purpose of the test was to evaluate the performance of a timber floor construction protected by a ceiling, when incorporating down lighter light fitting assemblies.</p>
<b>Sampling</b>	<p><b>Warringtonfire</b> was not involved in the sampling or selection of the tested specimen or any of the components.</p> <p>The results obtained during the test only apply to the test samples as provided by the test sponsor.</p>
<b>Installation</b>	<p>Representatives of <b>Warringtonfire</b> assembled the floor construction and installed the downlighters between the 12<sup>th</sup> and 17<sup>th</sup> September 2019.</p>
<b>Conditioning</b>	<p>The specimen's storage, construction, and test preparation took place in the test laboratory over a total, combined time of 6 days. Throughout this period of time both the temperature and the humidity of the laboratory were measured and recorded as being within a range of from 15°C to 23.5°C and 45.5% to 73.5% respectively.</p>
<b>Instruction to Test</b>	<p>The test was conducted on the 17 September 2019 at the request of Ansell Electrical Products Ltd, the test sponsor.</p> <p>Mr. J. Walker and Mr. C. Taylor, representatives of the test sponsor witness the test.</p>
<b>Ambient Temperature</b>	<p>The ambient air temperature in the vicinity of the test construction was 23°C at the start of the test with a maximum variation of +1 °C during the test.</p>
<b>Furnace</b>	<p>The furnace was controlled so that its mean temperature complied with the requirements of BS EN 1363-1: 2012 Clause 5.1 using eight plate thermometers, distributed over a plane 100 mm from the underside of test assembly.</p>
<b>Thermocouples</b>	<p>Thermocouples were provided to monitor the unexposed surface of the specimen. The output of all instrumentation was recorded at no less than one minute intervals. The locations and reference numbers of the various unexposed surface thermocouples are shown in Figure 1.</p>
<b>Application of the load</b>	<p>The full test load was applied via dead load uniformly distributed over the test specimen 60 minutes before the commencement of the test.</p>
<b>Loadbearing Capacity Criteria</b>	<p>A linear deflection transducer was provided at the approximate centre on the unexposed surface of the specimen to record its vertical deflection.</p>
<b>Furnace Pressure</b>	<p>After the first five minutes of testing and for the remainder of the test, the furnace atmospheric pressure was controlled so that it complied with the requirements of BS EN 1363-1: 2012, clause 5.2.1 The calculated pressure differential relative to the laboratory atmosphere 100 mm below the soffit of the specimen was 19 (± 5) Pa between 5 and 10 minutes and 19 (± 3) Pa thereafter.</p>

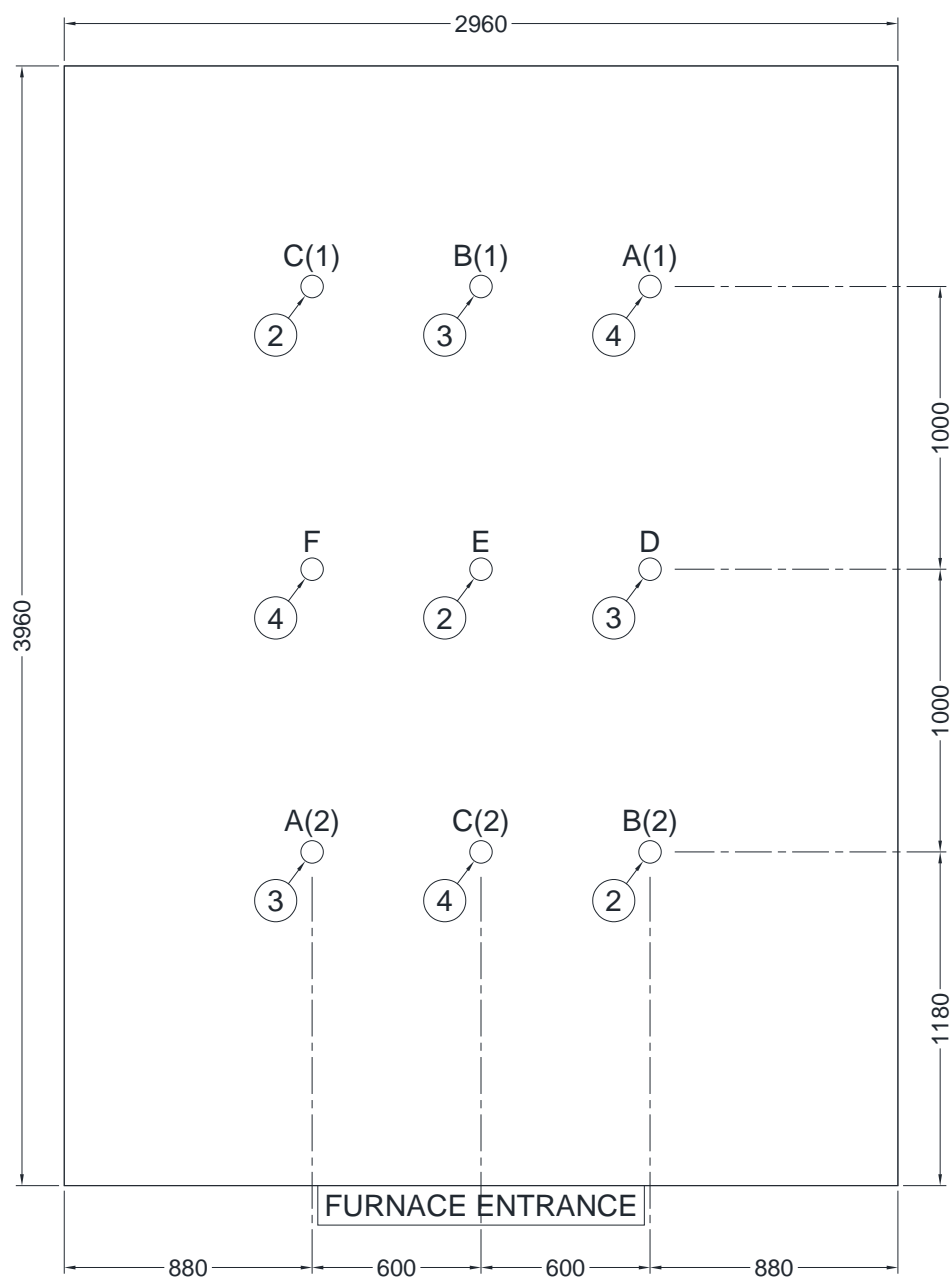
# Test Specimen Drawings

Figure 1- Plan View of Test Specimen



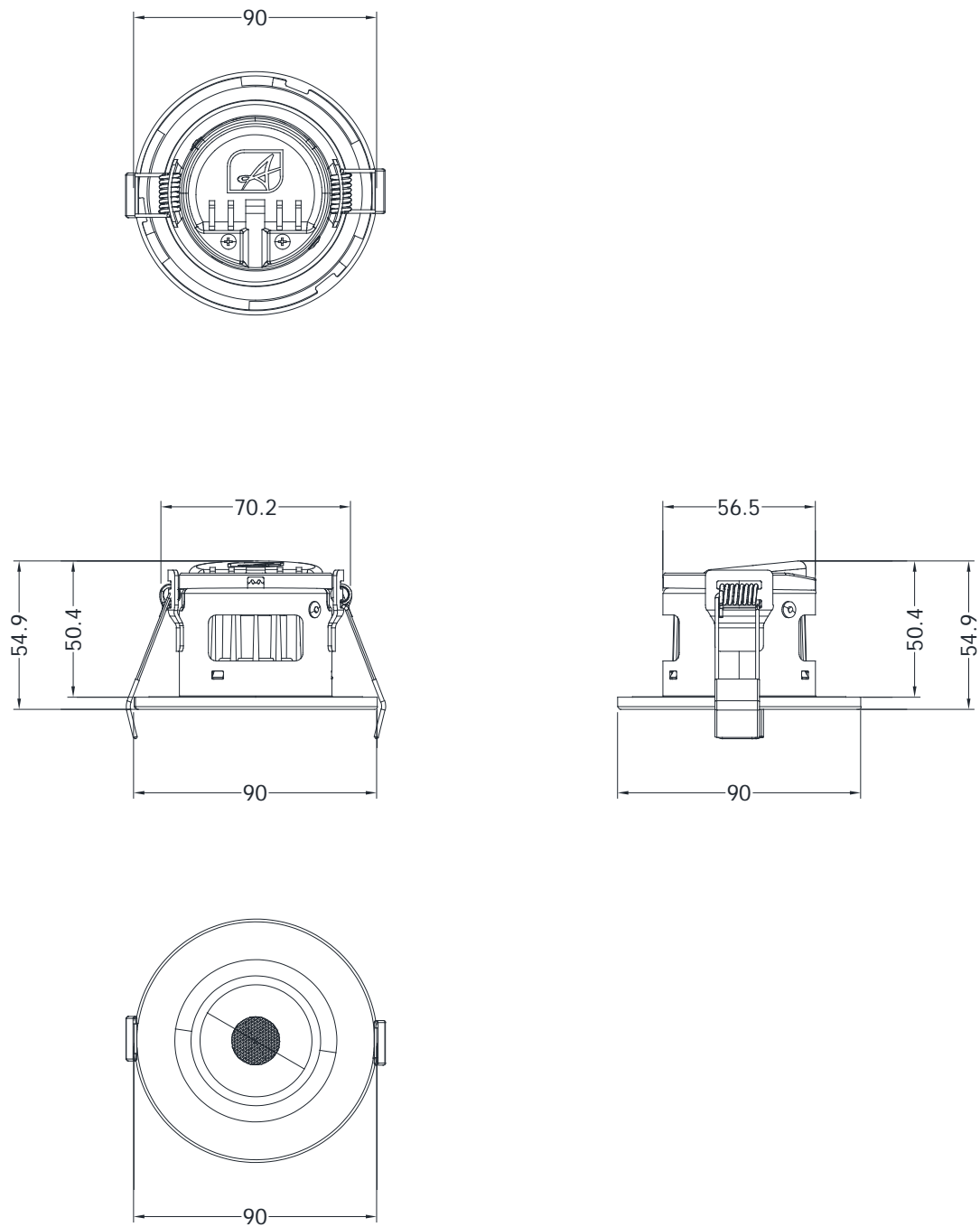
Do not scale. All dimensions are in mm



**Figure 2 – Details of Downlighter Positions**

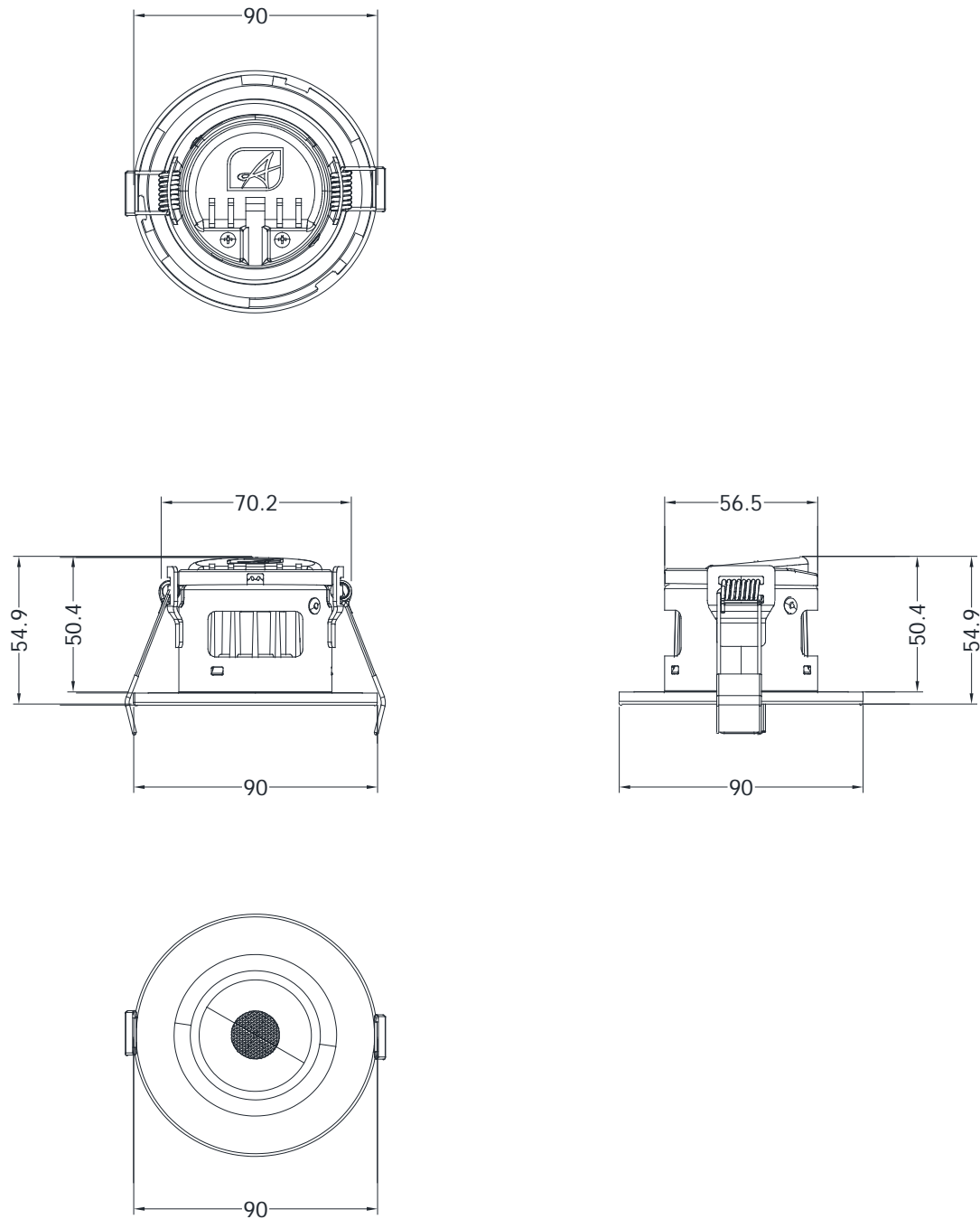
Do not scale. All dimensions are in mm

**Figure 3 – Details of Downlighter Specimen A (1 & 2)**

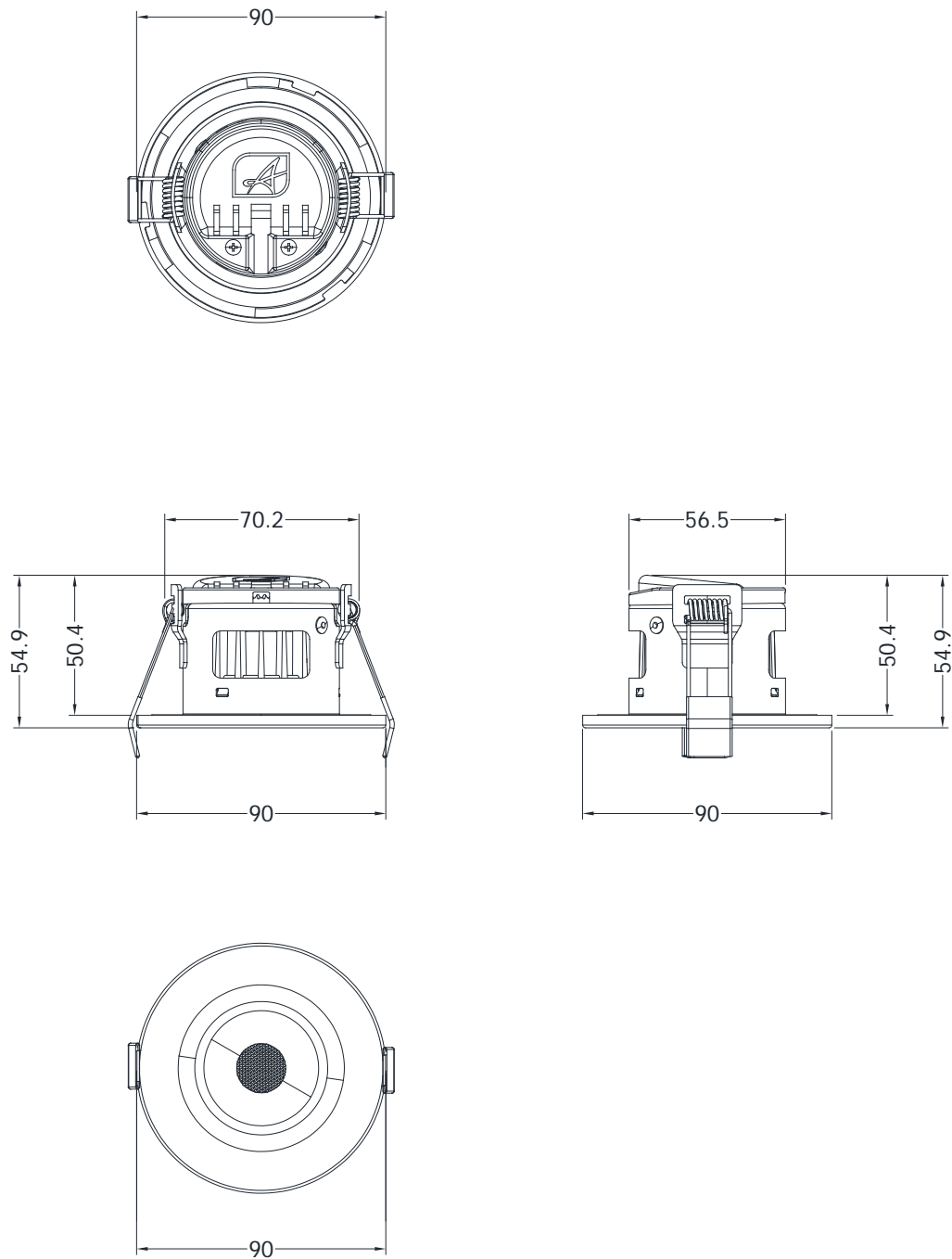


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**Figure 4 – Details of Downlighter Specimen B (1 & 2)**

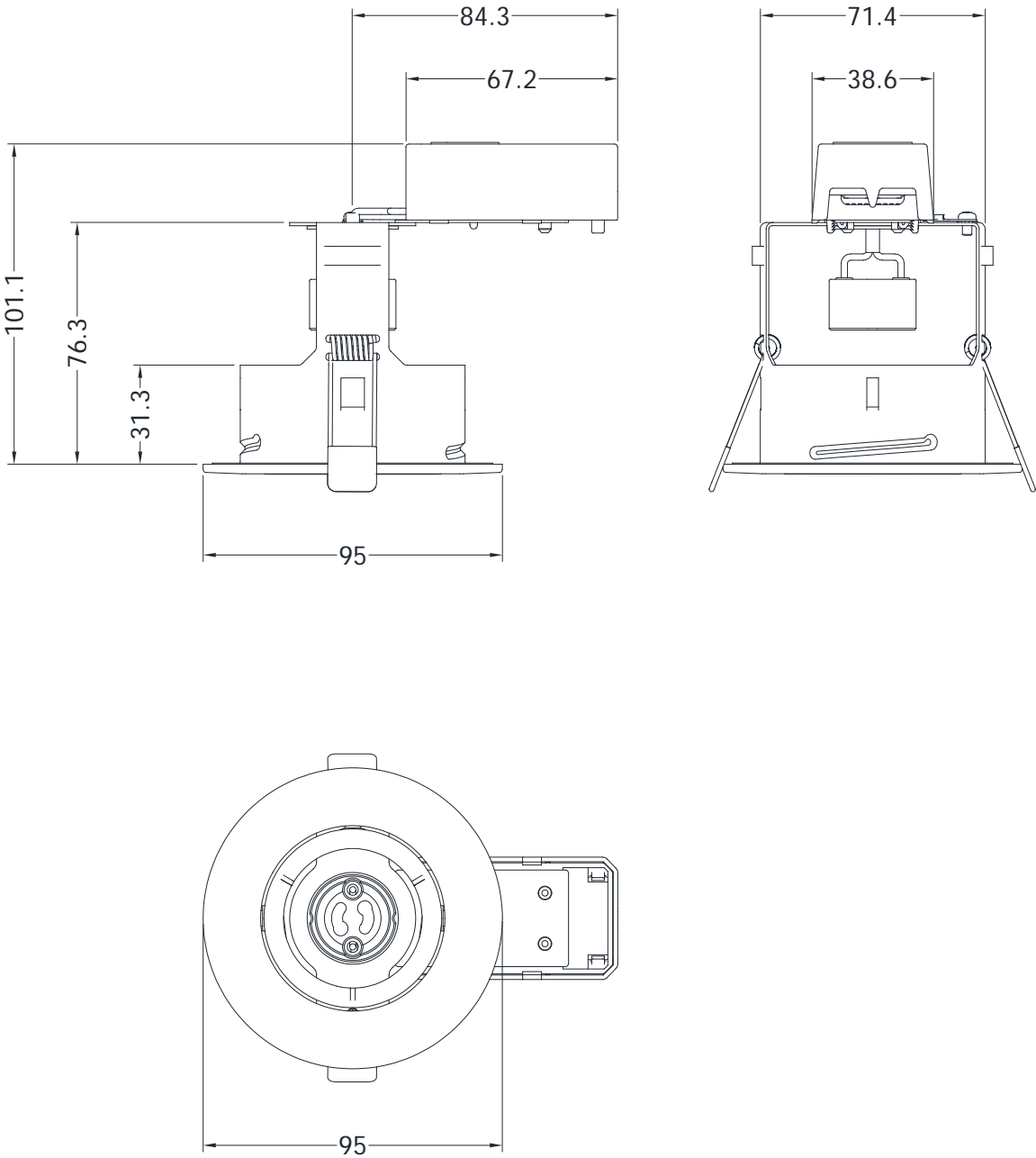


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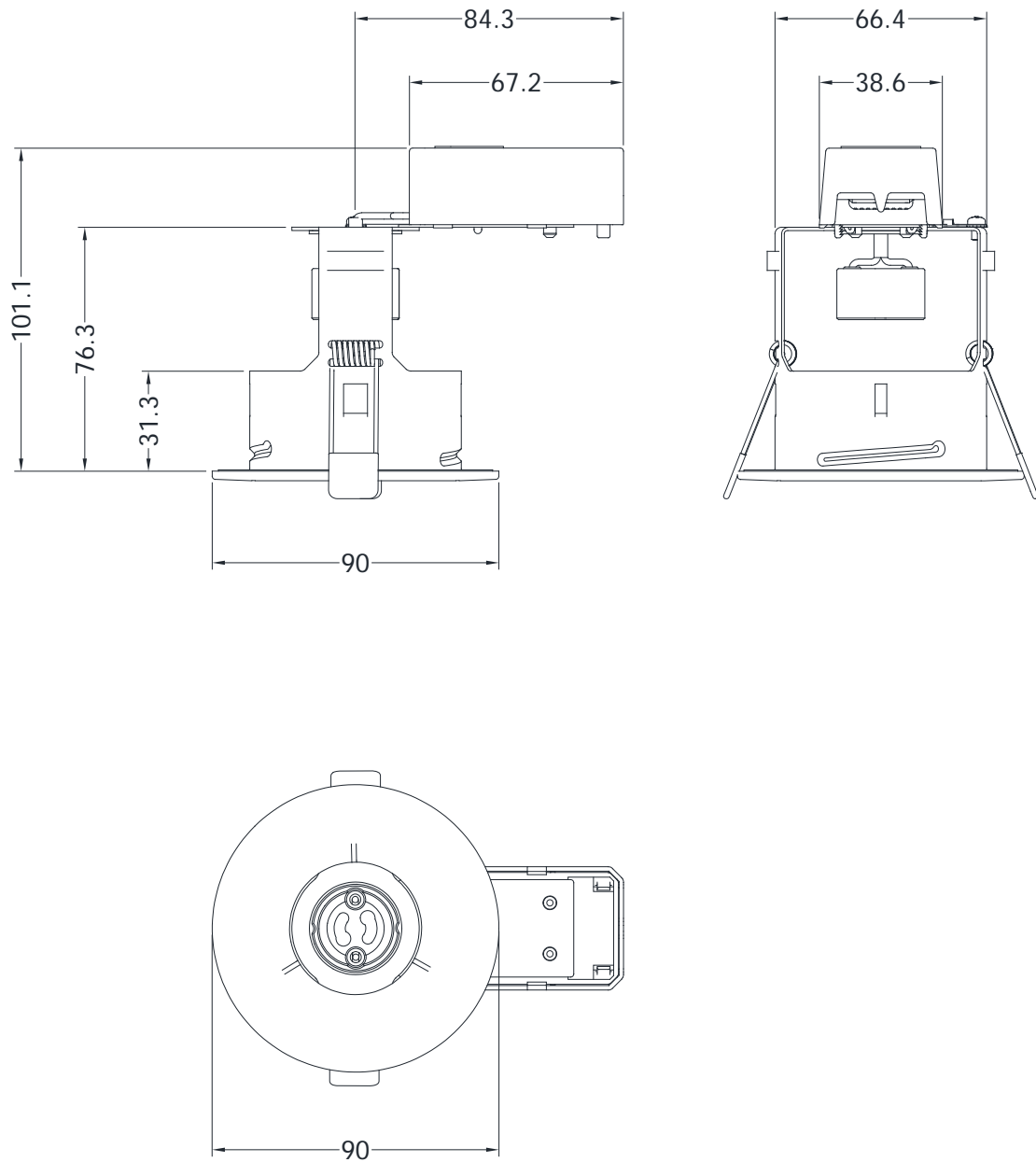
**Figure 5 – Details of Downlighter Specimen C (1 & 2)**

Do not scale. All dimensions are in mm

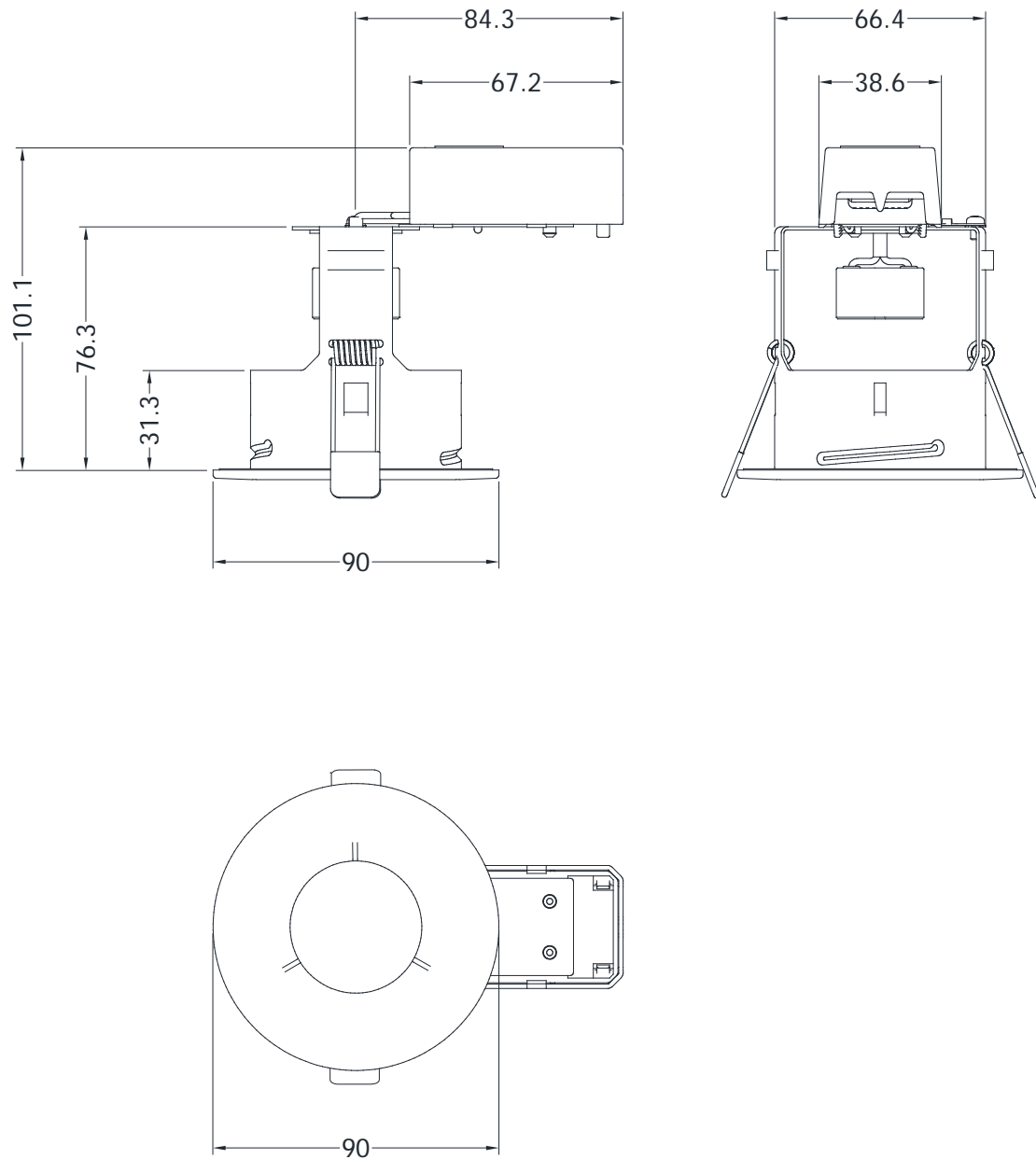
**Figure 6 – Details of Downlighter Specimen D**



Do not scale. All dimensions are in mm

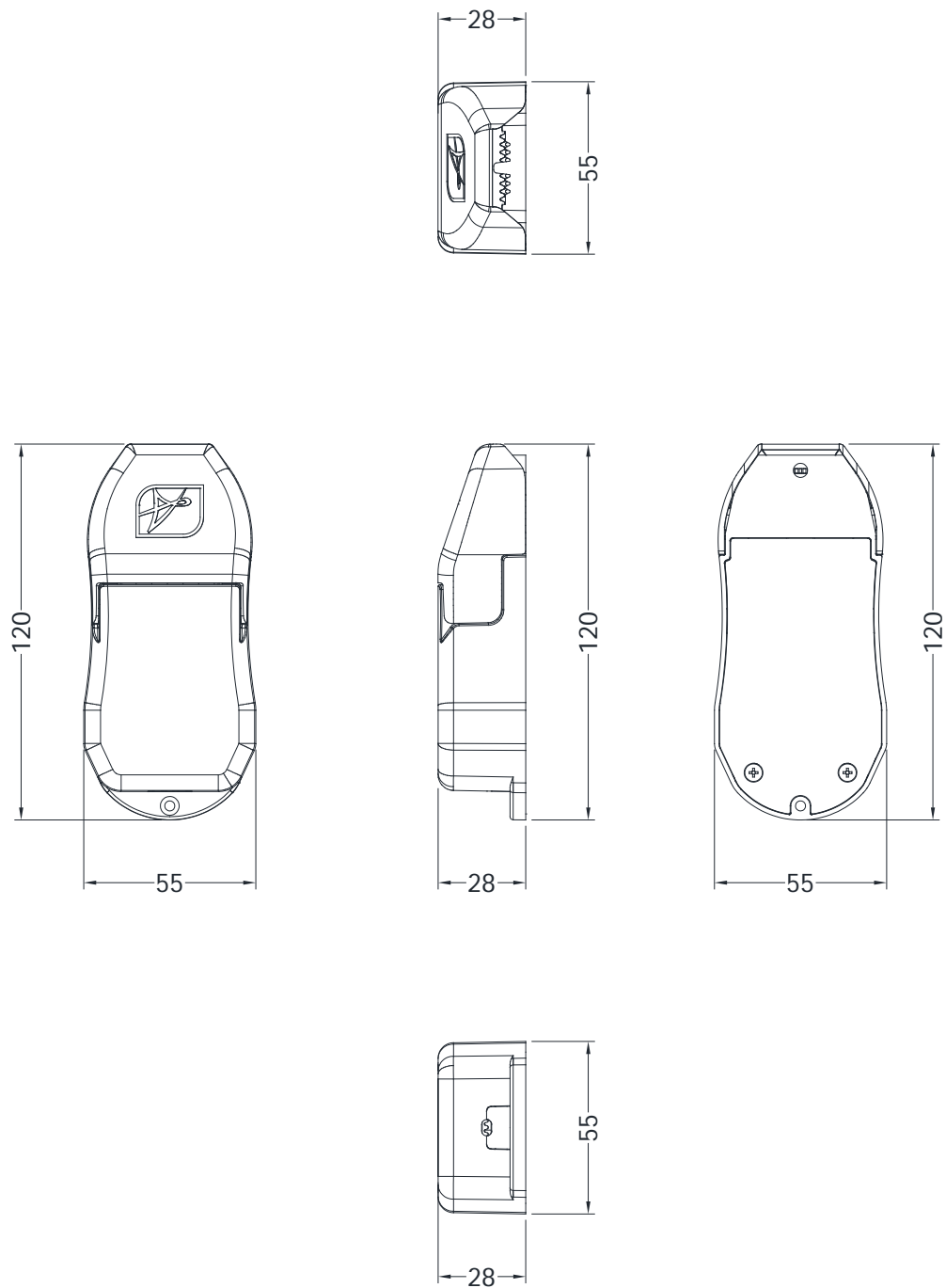
**Figure 7 – Details of Downlighter Specimen E**

Do not scale. All dimensions are in mm

**Figure 8 – Details of Downlighter Specimen F**

Do not scale. All dimensions are in mm

**Figure 9 – Details of Driver for Downlighters**



Do not scale. All dimensions are in mm



# Schedule of Components

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(Refer to Figures 1 to 6)

(All values are nominal unless stated otherwise)

(All other details are as stated by the sponsor)

<u>Item</u>	<u>Description</u>
<b>1. Timber Floor</b>	
1.1. Engineered-Joints	
Manufacturer	: James Jones & Sons Ltd
Reference	: JJI 220 B+
Assembled joist size	: 62.3 mm wide x 220 mm deep x 4400 mm long
Top and bottom chords	
i. material	: General commercial softwood
ii. density	: 528.6 kg/m <sup>3</sup> , measured
iii. cross section	: 45 mm high x 63 mm wide x 4400mm long
Web	
i. material	: Oriented strand board, OSB
ii. density	: 600.6 kg/m <sup>3</sup> , measured
iii. cross section	: 156 mm high x 9.8 mm thick x 4400 mm
Centres	: 600 mm, please see Figure 1
1.2. End Joists	
Material	: British home-grown, rough sawn softwood, kiln dried
Grade	: C24, to BS EN 519
Density	: 316 kg/m <sup>3</sup> , measured
Size	: 45 mm wide x 220 mm deep x 2886 long
Fixing method	: Fitted across the ends of the posi-joists and through screwed to the top and bottom chords of each joist
1.3. Noggins (Section of Engineered Joist)	
i. materials	: General commercial softwood top & bottom chord, OSB web
ii. cross section	: 63 mm wide x 220 mm deep
iii. fixing method	: Fitted between the joists, item 1.1, and fixed with fired nails. Please see Figure 1 for positions
1.4. Noggins	
i. material	: General commercial softwood
ii. density	: 433 kg/m <sup>3</sup> , measured
iii. cross section	: 70 mm wide x 42 mm high
iv. fixing method	: Fitted between the bottom chords of joist and fixed with fired nails. Please see Figure 1 for positions
1.5. Floor Boards	
i. material	: Flooring grade tongue and groove chipboards
ii. thickness	: 22 mm
iii. density	: 648.4 kg/m <sup>3</sup> , measured
iv. fixing method	: Fixed in a single layer with 60 mm long x 5 mm diameter countersunk steel screws to floor joists at 300 mm centres

**Item****Description****1. Timber Floor (Continued)****1.6. Ceiling Boards**

Manufacturer	:	British Gypsum
Reference	:	Gyproc Wallboard
Material	:	Type A gypsum complete with strong paper liners
Thickness	:	15 mm thick
Fixing method	:	The boards were screw fixed to the soffit of the joists. All joints were paper taped with Gyproc joint tape and skimmed with British Gyproc joint filler

**Fixings**

i. manufacturer	:	Senco
ii. reference	:	Duraspin 39A35MP
iii. type	:	Bugle head sharp point, coarse thread drywall screws
iv. material	:	Black phosphate finished steel
v. overall size	:	35 mm long x 3.9 mm diameter
vi. centres	:	150 mm centres along joints and 150 mm to the perimeter of the ceiling

**2. Specimen A**

Manufacturer	:	Ansell Electrical Products Ltd
Reference	:	APRILEDP/G/MW
Overall dimensions and construction	:	See Figure 3 for details
<b>Luminaire Details</b>		
i. body materials	:	Die-cast Aluminium, Polycarbonate, Steel
ii. diffuser material	:	PMMA
iii. diffuser rating	:	650°C
iv. chipset	:	SUNPU 2828
v. weight	:	0.31Kg
vi. input voltage	:	220-240V
vii. input frequency	:	50-60Hz
viii. inrush current	:	≤5A 2.2μS
ix. running current	:	0.033A
x. electrical class	:	II
xi. lamp type	:	LED
xii. maximum lamp size	:	28 mm x 28 mm
xiii. MacAdam steps	:	6
xiv. lumen depreciation	:	70lm – 60,000hrs
xv. LED driver manufacturer	:	D&S
xvi. IP rating	:	IP65
xvii. operating temperature	:	-5 °C to 25 °C
xviii. correlated colour temperature	:	2700K - 3000K - 4000K & 6000k
xix. colour rendering index	:	Ra80
xx. forward voltage	:	27V
xxi. total power	:	7W
xxii. power factor	:	0.9
xxiii. cut out size	:	73 mm

<b><u>Item</u></b>	<b><u>Description</u></b>
<b>3. Specimen B</b>	
Manufacturer	: Ansell Electrical Products Ltd
Reference	: APRILEDP/CW
Overall dimensions and construction	: See Figure 4 for details
Luminaire Details	
i. body materials	: Die-cast Aluminium, Polycarbonate, Steel
ii. diffuser material	: PMMA
iii. diffuser rating	: 650°C
iv. chipset	: Nationstar 3528
v. weight	: 0.28Kg
vi. input voltage	: 220-240V
vii. input frequency	: 50-60Hz
viii. inrush current	: ≤5A 2.2μS
ix. running current	: 0.032A
x. electrical class	: II
xi. lamp type	: LED
xii. maximum lamp size	: 35 mm x 28 mm
xiii. MacAdam steps	: 6
xiv. lumen depreciation	: 70lm – 60,000hrs
xv. LED driver manufacturer	: D&S
xvi. IP rating	: IP65
xvii. operating temperature	: -5 °C to 25 °C
xviii. correlated colour temperature	: 4000K
xix. colour rendering index	: Ra80
Luminaire Details	
xx. forward voltage	: 27V
xxi. total power	: 6.4W
xxii. power factor	: 0.9
xxiii. cut out size	: 73 mm diameter
<b>4. Specimen C</b>	
Manufacturer	: Ansell Electrical Products Ltd
Reference	: APRILEDP/CCT
Overall dimensions and construction	: See Figure 6 for details
Luminaire Details	
i. body materials	: Die-cast Aluminium, Polycarbonate, Steel
ii. diffuser material	: PC
iii. diffuser rating	: 650°C
iv. chipset	: SUNPU 2828
v. weight	: 0.28Kg
vi. input voltage	: 220-240V
vii. input frequency	: 50-60Hz
viii. inrush current	: ≤5A 2.2μS
ix. running current	: 0.033A
x. electrical class	: II
xi. lamp type	: LED
xii. maximum lamp size	: 28 mm x 28 mm
xiii. MacAdam steps	: 6
xiv. lumen depreciation	: 70lm – 60,000hrs
xv. LED driver manufacturer	: D&S
xvi. IP rating	: IP65
xvii. operating temperature	: -5 °C to 25 °C
xviii. correlated colour temperature	: 2700K - 3000K - 4000K & 6000k

**Item****Description****4. Specimen C (Continued)**

## Luminaire Details

xix. colour rendering index	:	Ra80
xx. forward voltage	:	27V
xxi. total power	:	7W
xxii. power factor	:	0.9
xxiii. cut out size	:	73 mm diameter

**5. Specimen D**

Manufacturer : Ansell Electrical Products Ltd

Reference : AEFRG/MW

Overall dimensions and construction : See Figure 7 for details

## Luminaire Details

i. body materials	:	Aluminium
ii. weight	:	0.19Kg
iii. input voltage	:	230v
iv. input frequency	:	50Hz
v. electrical class	:	I
vi. lamp type	:	GU10
vii. maximum lamp size	:	50 mm x 60 mm
viii. IP rating	:	IP20
ix. operating temperature	:	5 °C to 25 °C
x. total power	:	50W
xi. cut out size	:	76 mm diameter

**6. Specimen E**

Manufacturer : Ansell Electrical Products Ltd

Reference : AEFRD/MW

Overall dimensions and construction : See Figure 7 for details

## Luminaire Details

i. body materials	:	Aluminium
ii. weight	:	0.18Kg
iii. input voltage	:	230v
iv. input frequency	:	50Hz
v. electrical class	:	I
vi. lamp type	:	GU10
vii. maximum lamp size	:	50 mm x 60 mm
viii. IP rating	:	IP20
ix. operating temperature	:	5 °C to 25 °C
x. total power	:	50W
xi. cut out size	:	76 mm diameter

**7. Specimen F**

Manufacturer : Ansell Electrical Products Ltd

Reference : AEFRD/IP65/MW

Overall dimensions and construction : See Figure 8 for details

## Luminaire Details

i. body materials	:	Aluminium
ii. weight	:	0.19Kg
iii. input voltage	:	230v
iv. input frequency	:	50Hz
v. electrical class	:	I
vi. lamp type	:	GU10
vii. maximum lamp size	:	50 mm x 60 mm

**Item****Description****7. Specimen F (Continued)**

## Luminaire Details

viii. IP rating	:	IP65
ix. operating temperature	:	5 °C to 25 °C
x. total power	:	50W
xi. cut out size	:	76 mm diameter

## Test Observations

Time		All observations are from the unexposed face unless noted otherwise.
mins	secs	
-60	00	Load applied
00	00	<b>The test commences.</b>
04	14	Slight steam/smoke release from the perimeter of the specimen.
07	30	When viewed from the exposed face Specimen C(2) has detached, and the bulb from Specimen F has detached.
09	07	When viewed from the exposed face, tape and scrim is detaching.
11	54	No significant visible change.
13	53	When viewed from the exposed face, all jointing tape has detached, joints are beginning to darken and boards glow a dull orange colour.
14	55	When viewed from the exposed face, the bulb from Specimen E has detached.
17	44	No significant visible change.
18	41	When viewed from the exposed face, Specimen C(1) has detached.
20	20	When viewed from the exposed face, the perimeter frame of Specimens B(2) and D have detached.
21	28	When viewed from the exposed face, joints in the central section of the boards are beginning to open, approximately 5-10 mm.
23	39	No significant visible change.
26	26	When viewed from the exposed face, joints continue to open to approximately 15 mm. Flaming can be seen at joint locations.
29	44	When viewed from the exposed face, joints have opened to approximately 20 mm.
30	00	Specimen continues to maintain to satisfy insulation integrity and load bearing performance criteria.
30	10	<b>Test discontinued at clients request.</b>

## Test Photographs

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The exposed face of the floor assembly prior to test



The unexposed face of the floor assembly after 5 minutes of testing





The unexposed face of the floor assembly after 15 minutes of testing



The unexposed face of the floor assembly after 30 minutes of testing





## Temperature, Pressure and Deflection Data

Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In The Standard BS EN 1363-1: 2012

Time Mins	Specified Furnace Temperature Deg. C	Actual Furnace Temperature Deg. C
0	20	46
1	349	430
2	445	487
3	502	510
4	544	547
5	576	582
6	603	597
7	626	632
8	646	656
9	663	669
10	678	678
11	693	691
12	706	724
13	717	706
14	728	748
15	739	753
16	748	735
17	757	770
18	766	766
19	774	771
20	781	777
21	789	786
22	796	793
23	802	799
24	809	805
25	815	811
26	820	818
27	826	824
28	832	829
29	837	835
30	842	840

**Individual Temperatures And Mean Recorded On The Unexposed Surface Of The Specimen**

Time Mins	T/C Number 211 Deg. C	T/C Number 212 Deg. C	T/C Number 213 Deg. C	T/C Number 214 Deg. C	T/C Number 215 Deg. C	Mean Temp Deg. C
0	17	17	17	18	20	18
1	17	17	17	17	20	18
2	17	17	17	18	20	18
3	17	17	17	18	20	18
4	17	17	17	18	20	18
5	17	17	17	18	20	18
6	17	17	18	18	21	18
7	18	18	18	18	21	19
8	18	18	18	18	21	19
9	18	18	18	19	22	19
10	19	19	18	19	23	20
11	19	19	18	20	23	20
12	20	20	18	21	24	21
13	21	21	19	22	25	22
14	21	22	19	22	25	22
15	22	23	19	23	26	23
16	23	23	20	24	27	23
17	24	24	20	25	28	24
18	25	25	21	26	29	25
19	25	26	21	27	30	26
20	26	27	22	28	30	27
21	27	28	22	28	31	27
22	28	28	22	29	32	28
23	29	29	23	30	33	29
24	29	30	24	31	33	29
25	30	31	24	32	34	30
26	31	32	24	32	35	31
27	32	32	25	33	36	32
28	33	33	25	34	37	32
29	34	34	26	35	38	33
30	36	36	26	37	41	35

**Individual Temperatures Recorded On The Unexposed Surface Of The Specimen Adjacent to Joints**

Time Mins	T/C Number 216 Deg. C	T/C Number 217 Deg. C	T/C Number 218 Deg. C	T/C Number 219 Deg. C	T/C Number 220 Deg. C	T/C Number 221 Deg. C
0	20	20	20	21	20	20
1	20	20	20	20	20	20
2	20	20	20	21	20	20
3	20	20	20	21	20	20
4	20	20	20	21	21	20
5	21	20	20	21	21	20
6	21	20	20	21	21	20
7	21	20	20	21	21	21
8	21	20	20	22	21	21
9	22	20	20	22	21	21
10	22	20	20	23	21	21
11	23	20	20	24	21	21
12	23	21	20	25	21	21
13	24	21	21	26	22	21
14	25	21	21	27	22	22
15	25	22	21	28	22	22
16	26	22	22	29	23	23
17	27	22	22	30	23	23
18	28	23	22	32	23	24
19	29	23	23	33	24	24
20	29	24	23	34	24	25
21	30	24	24	35	24	25
22	31	25	24	36	25	26
23	32	25	25	37	25	26
24	33	25	25	38	26	27
25	34	26	26	40	26	28
26	35	26	26	41	26	28
27	36	27	27	42	27	29
28	37	27	28	44	27	30
29	38	28	28	46	28	31
30	40	28	29	48	28	32

**Individual Temperatures Recorded At Mid-Height Of The Cavity Coincidental With The Light Fittings**

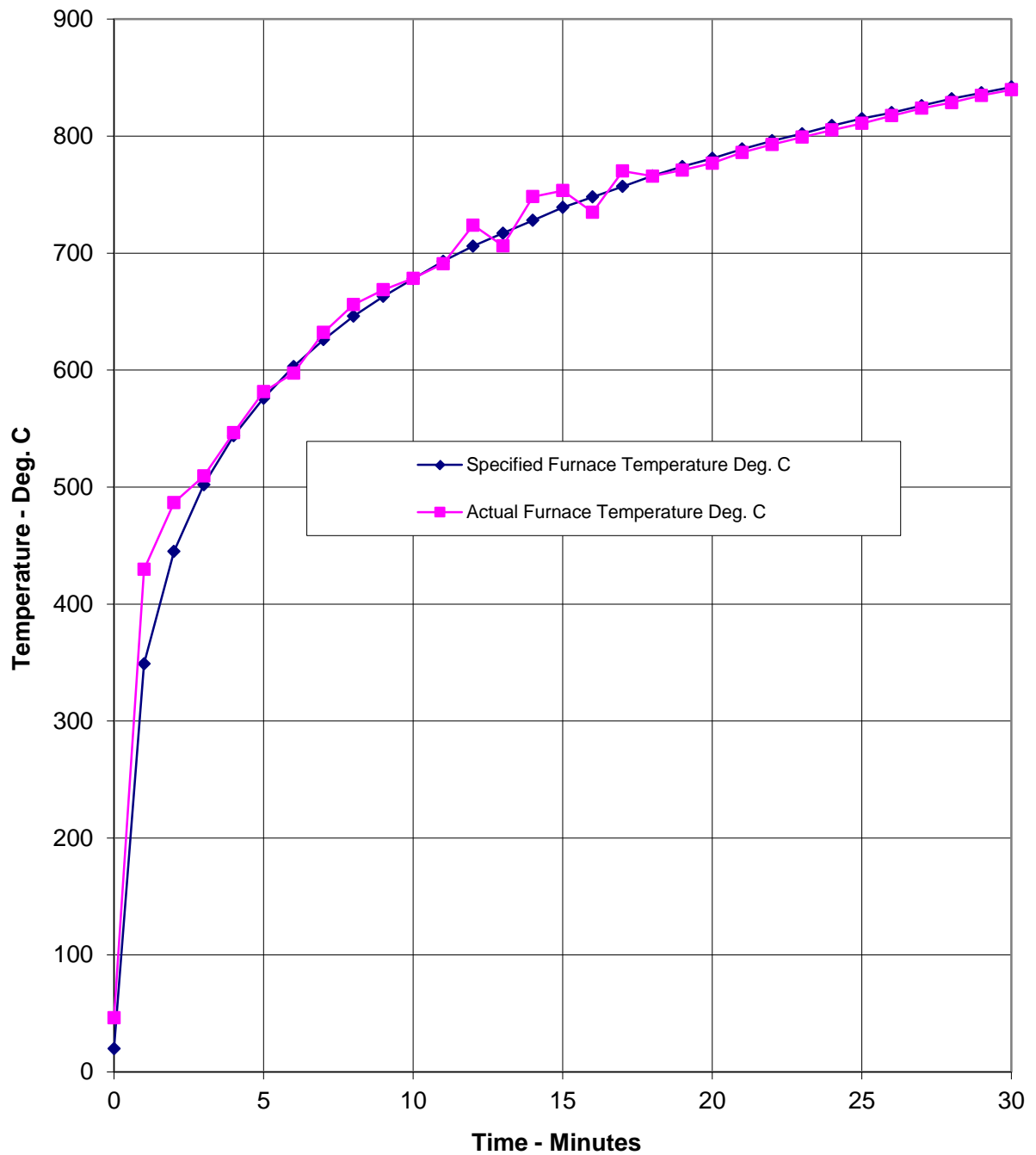
Time Mins	T/C Number 222 Deg. C	T/C Number 223 Deg. C	T/C Number 224 Deg. C	T/C Number 225 Deg. C	T/C Number 226 Deg. C	T/C Number 227 Deg. C	T/C Number 228 Deg. C	T/C Number 229 Deg. C	T/C Number 230 Deg. C
0	22	22	22	50	23	23	22	32	23
1	*	25	25	*	33	27	21	36	51
2	49	28	43	67	40	39	21	49	56
3	57	36	59	67	50	49	22	64	64
4	62	42	68	70	55	57	22	78	66
5	68	49	82	73	61	61	23	86	72
6	70	53	89	83	65	66	24	89	76
7	72	57	89	89	69	69	26	92	80
8	77	59	91	95	74	73	27	100	83
9	83	61	101	99	79	78	29	108	89
10	86	63	106	135	99	84	31	113	94
11	89	64	107	151	135	93	33	110	98
12	92	66	112	143	130	100	34	108	100
13	95	68	110	152	144	109	36	113	103
14	98	70	110	154	152	122	38	112	104
15	103	72	110	137	127	118	39	120	104
16	105	74	111	148	134	122	40	126	108
17	111	76	115	138	139	116	42	127	113
18	117	78	118	135	131	121	43	132	118
19	124	80	129	128	124	125	44	140	126
20	134	83	143	137	133	134	46	150	137
21	155	87	160	148	145	141	47	170	155
22	173	93	179	155	157	149	48	193	169
23	187	100	195	167	172	159	50	209	182
24	199	108	203	175	187	168	52	216	195
25	209	116	211	183	198	179	56	225	203
26	218	123	217	192	206	187	61	235	212
27	223	130	223	198	218	193	67	244	223
28	231	137	232	204	224	200	74	251	231
29	238	143	243	210	229	207	79	257	241
30	245	149	247	216	234	213	83	270	247

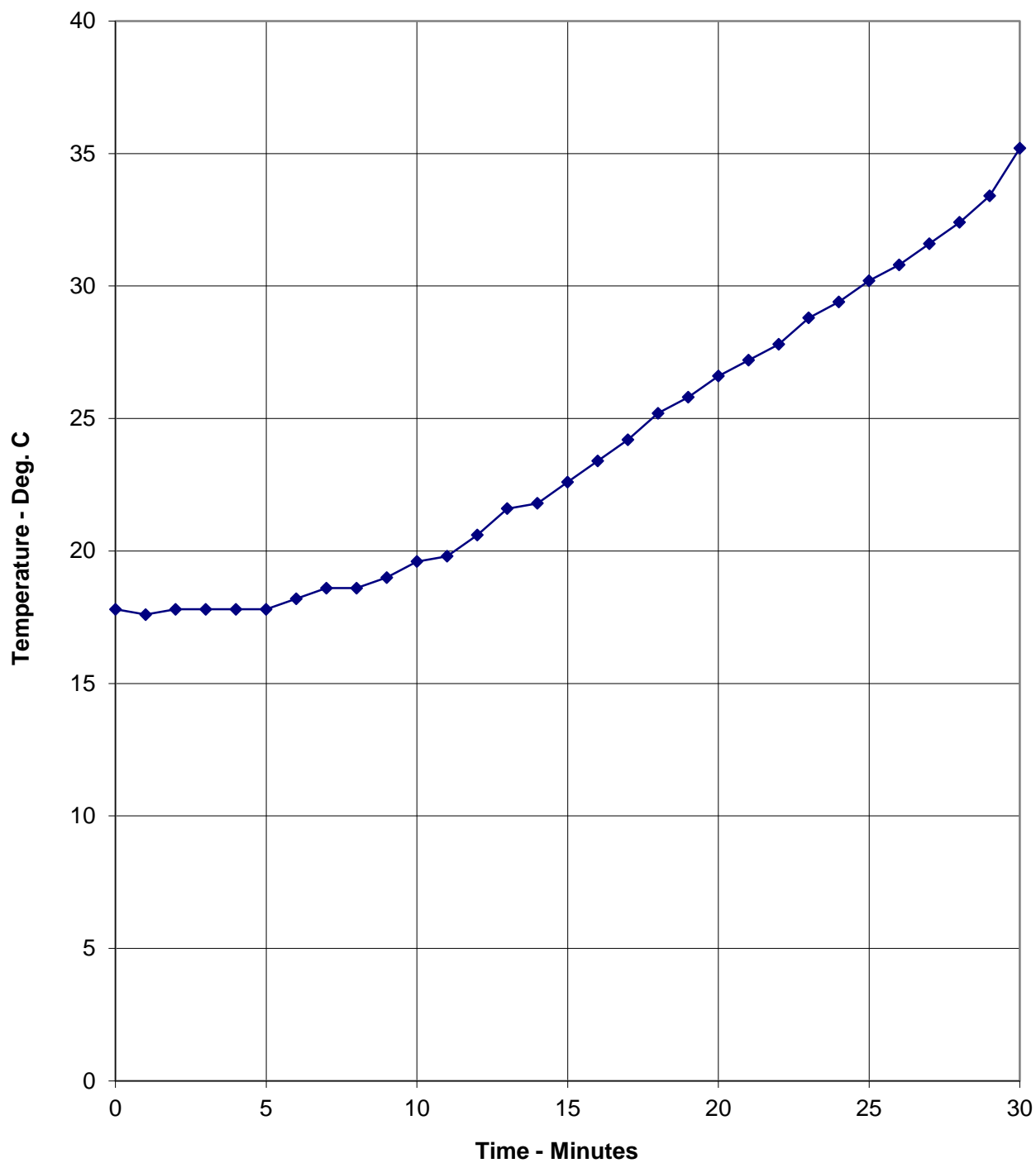
\*Temporary thermocouple Malfunction

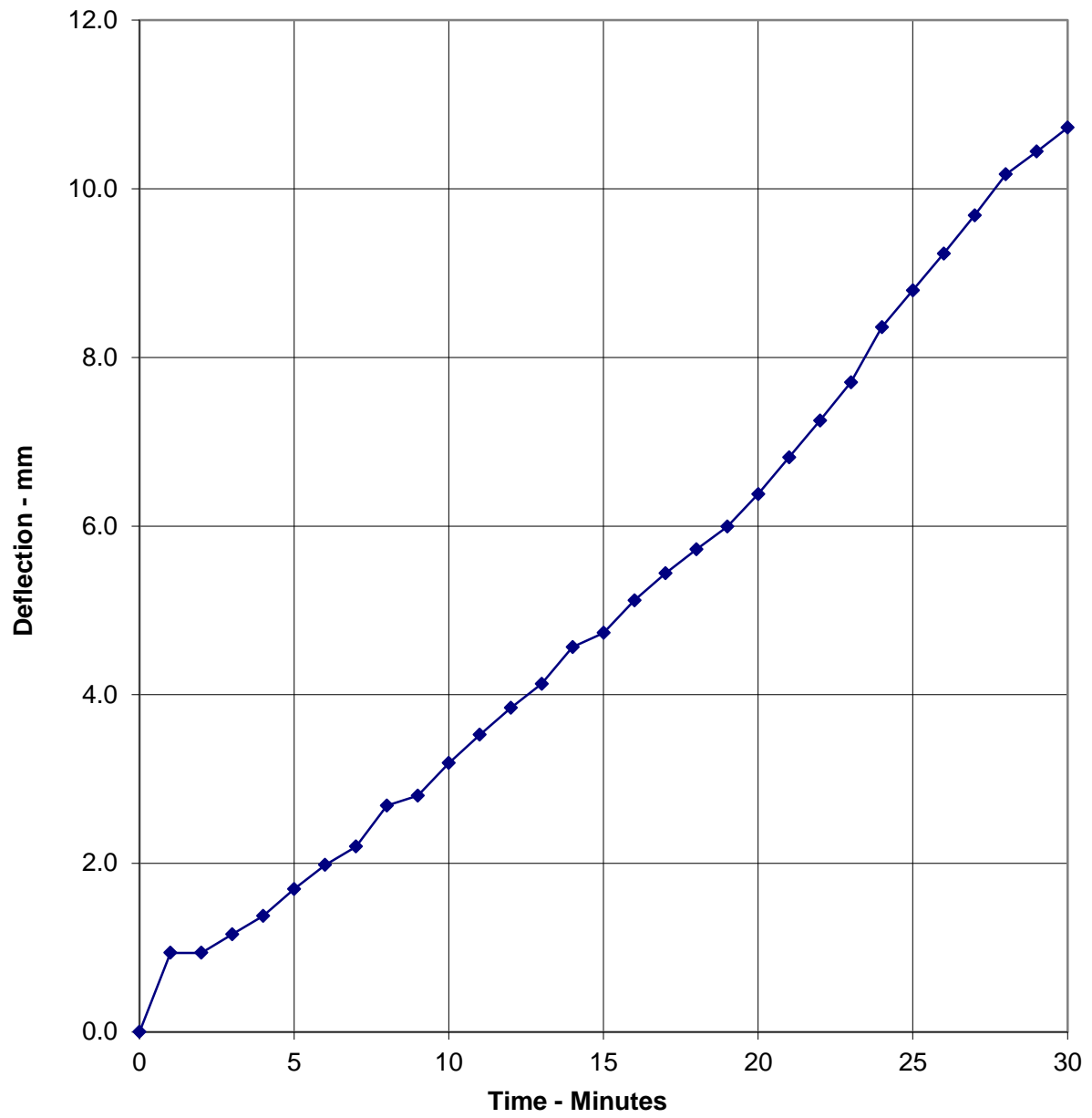
**Central Vertical Deflection Of The Specimen**

Time Mins	Central Vertical Deflection mm	Rate Of Deflection mm/min
0	0.0	0.0
1	0.9	0.9
2	0.9	0.0
3	1.2	0.2
4	1.4	0.2
5	1.7	0.3
6	2.0	0.3
7	2.2	0.2
8	2.7	0.5
9	2.8	0.1
10	3.2	0.4
11	3.5	0.3
12	3.8	0.3
13	4.1	0.3
14	4.6	0.4
15	4.7	0.2
16	5.1	0.4
17	5.4	0.3
18	5.7	0.3
19	6.0	0.3
20	6.4	0.4
21	6.8	0.4
22	7.3	0.4
23	7.7	0.5
24	8.4	0.7
25	8.8	0.4
26	9.2	0.4
27	9.7	0.5
28	10.2	0.5
29	10.4	0.3
30	10.7	0.3

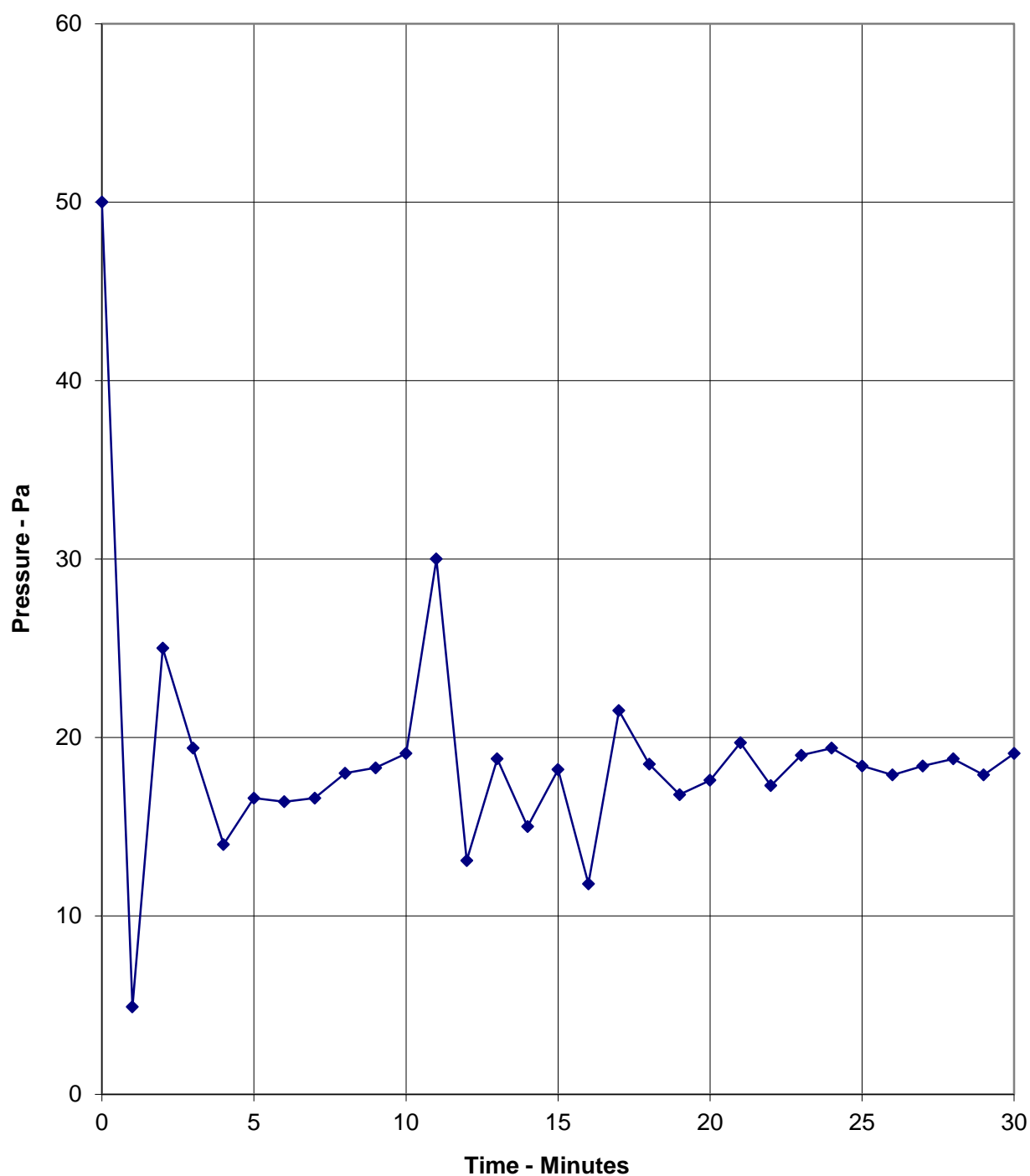
**Graph Showing Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In BS EN 1363-1: 2012**



**Graph Showing Mean Temperature Recorded On The Unexposed Surface Of The Specimen**

**Graph Showing The Recorded Vertical Deflection Of The Specimen**



**Graph Showing Recorded Furnace Pressure 100 mm Below The Underside Of The Specimen**

## On-going Implications

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### Limitations

This report details the method of construction, the test conditions and the results obtained when the specific elements of construction described herein were tested following the procedure outlined in BS EN 1363-1: 2012, and where appropriate BS EN 1363-2: 1999. Any significant deviation with respect to size, constructional details, loads, stresses, edge or end conditions other than those allowed under the field of direct application in the relevant test method is not covered by this report. Annex A of BS EN 1363-1: 2012, provides guidance information on the application of fire resistance tests and the interpretation of test data.

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

### EGOLF

Certain aspects of some fire test specifications are open to different interpretations. EGOLF have identified a number of such areas and have agreed resolutions which define common agreement of interpretations between fire test laboratories which are members of the groups. Where such resolutions are applicable to this test they have been followed.

## Field of Direct Application

The results are directly applicable to a similar untested floor construction provided the following is true:

**a) With respect to the structural building member:**

The maximum moments and shear forces, which when calculated on the same basis as the test load, shall not be greater than those tested.

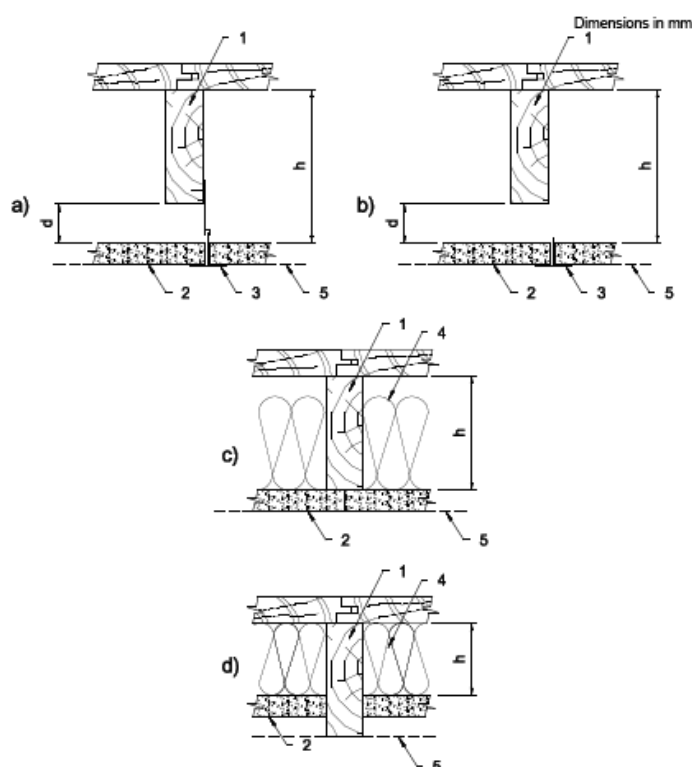
**b) With respect to the ceiling system:**

The size of panels of the ceiling lining shall not be changed.

The total area occupied by fixtures and fittings relative to the area of the ceiling lining is not increased and the maximum tested opening in the lining is not exceeded.

**c) With respect to the cavity:**

The height of the cavity 'h' and the minimum distance 'd' between the ceiling and the structural members (see Figure below) are equal to or greater than those tested.



### KEY

a) suspended ceiling

b) self-supported ceiling

c) and d) direct fixed ceiling with insulation in cavity

1 supporting construction (joist)

2 ceiling lining

3 supporting frame

4 insulation

5 pressure reference line

d distance between ceiling and structural members

h height of cavity